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U.S. AIR FORCE

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Headquarters U.S. Air Force

Linking Costs to Capabilities Based Planning and Programming



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Air Force Studies and Analyses Agency
Resource Analysis Directorate
23 June 2005



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Introduction



- **Background**
- **Methodology**
 - **Capability Relationships**
 - **Assumptions**
 - **Pilot Project**
 - **Programming**
- **Conclusions**



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Background

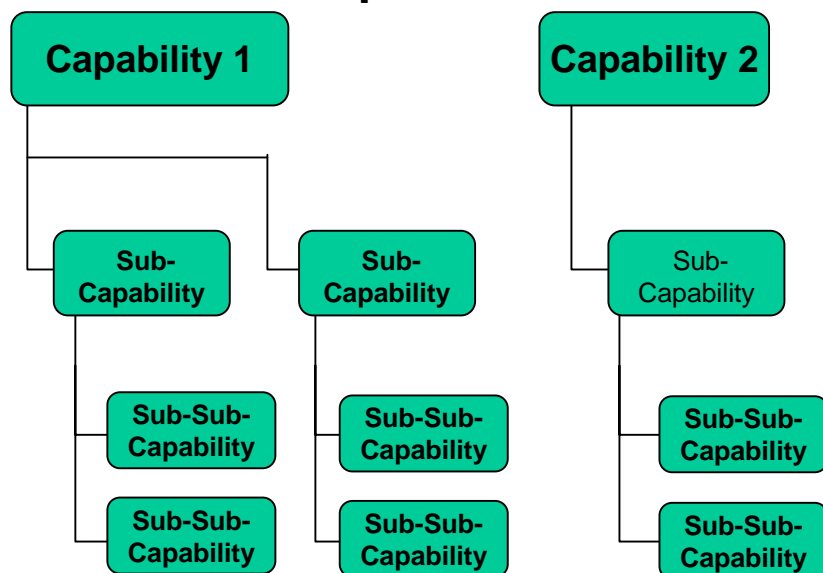
- **Capability Based Planning & Programming (CBP&P)**
 - **Term coined by AFSAA**
 - **Begins with CBP**
 - **Effects based, top-down driven**
 - **Programming ties costs to capabilities**
- **Supports USAF resource allocation decisions**
- **Road ahead for Joint US military planning**
- **Moving forward with Pilot Project**



Methodology: Capability Relationships



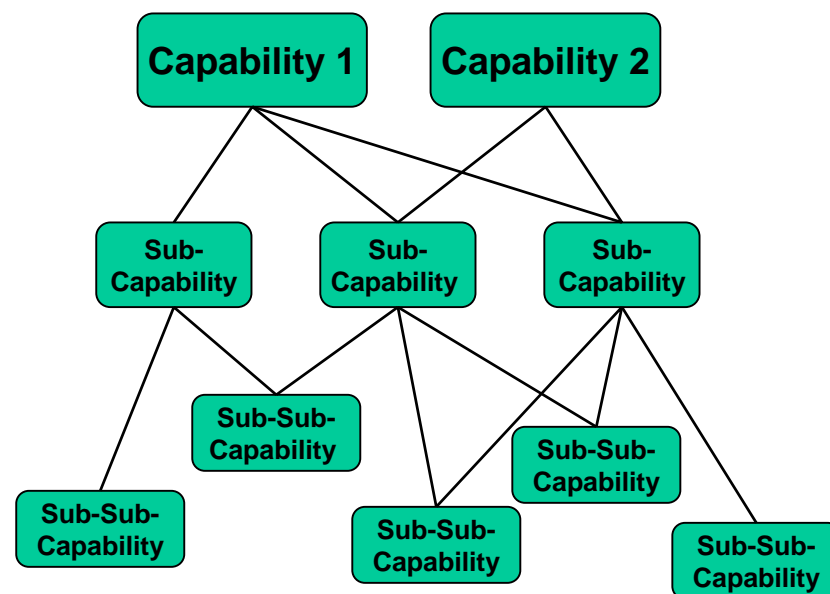
**Master Capability Library (MCL)
defines Air Force functional
capabilities**



Here is where we are

- Functionally oriented
- Collectively exhaustive, Mutually exclusive
- Provides library of capabilities down to task level

**Architectures describe how
capabilities interact operationally**



Here is where we need to go

- Operationally oriented
- Illustrates processes (eg. "F2T2EA")
- Explicitly identifies interdependencies (Requires robust metrics)



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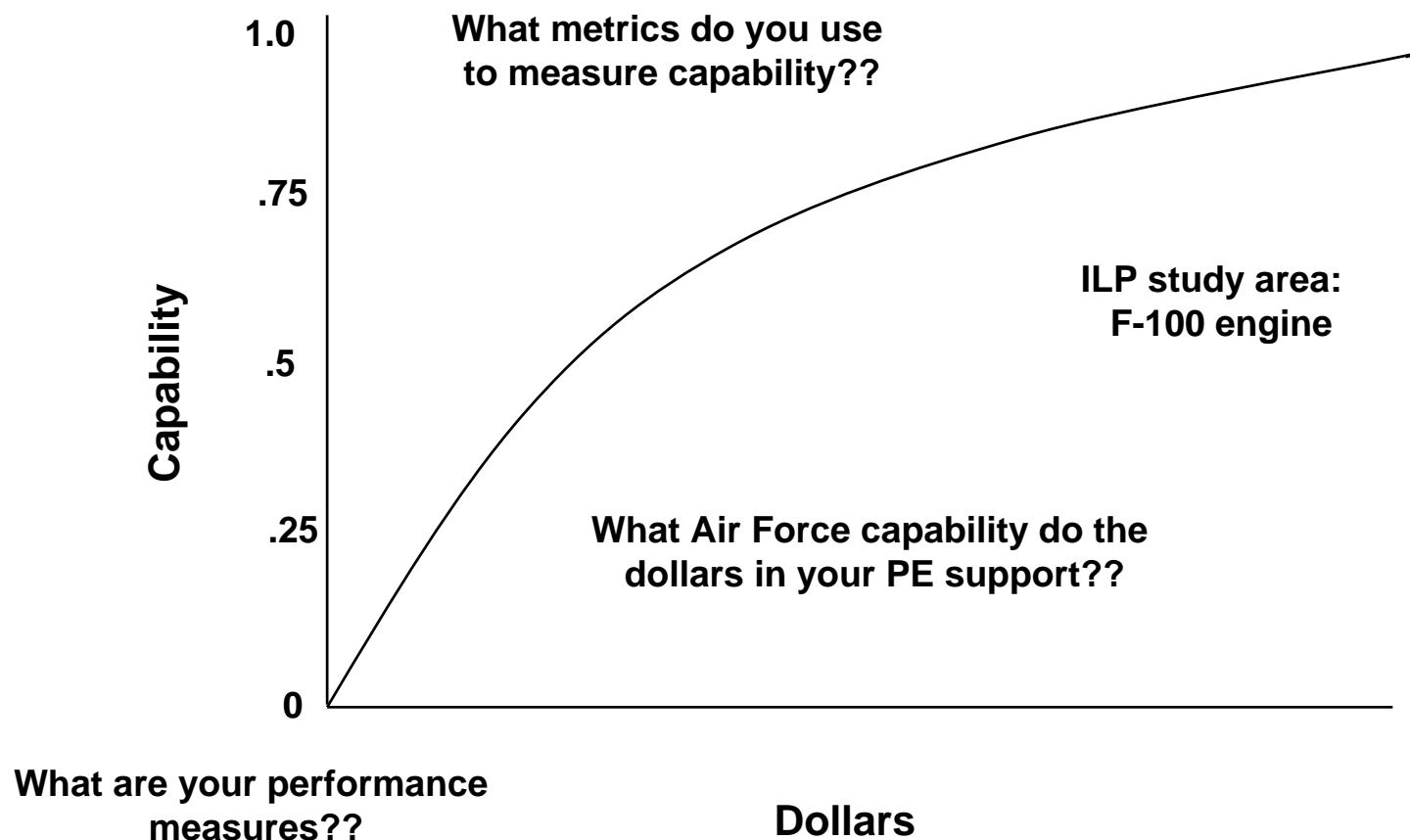
Methodology



- **Form team with SMEs**
 - **HQ USAF Installation and Logistics Directorate and Resources (ILP)**
 - **Air Force Studies and Analysis Agency**
- **Get execution cost data and metrics**
- **Map ILP focus areas to Master Capability Library (MCL)**
 - **Decompose to measurable task level**
- **Develop capability cost function**
 - **Get 5 year history of metrics and cost execution data**
- **Add capability cost function to master spreadsheet**
- **Test methodology with Pilot Project**



Methodology: Capability/Dollars





Methodology: Assumptions



- Can develop capability/cost function
- Financial estimates can be used
- Metrics can be developed
- Activity based costing could provide additional detail

Will identify more as we progress



Methodology: Pilot Project



- **Pilot Project Selection:**
 - **The F-100 Engine**

- **Data Sources:**
 - **Weapon System Cost Retrieval System (WSCRS)**
 - **Commanders' Resource Integration System (CRIS)**
 - **AF Total Ownership Cost (AFTOC)**



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Methodology:

Pilot Project & Master Capability Library



Create and Sustain the Force

9.1. Organize Forces

9.2. Train

9.3. Educate

9.4. Equip

9.4.1. Design, develop, acquire, and modernize (modify) force elements; includes equipment and systems

9.4.2. Respond to urgent wartime/contingency acquisition requirements

9.4.3. Ensure a viable industrial base

9.4.4. Test and Evaluate systems, equipment, and materiel

9.4.5. Test system, equipment, and material capabilities against mission requirements across life cycle

9.4.6. Sustain weapons systems

9.4.6.1. Aircraft

9.4.6.2. Engines

9.4.6.2.1. Number of war reserve engines available vs required

9.4.6.2.2. % of defect free engines vs total number produced

9.4.6.3. Munitions

9.4.6.4. Software maintenance

9.4.6.5. Parts

9.4.6.6. Tech Orders

9.4.6.7. Depot level field teams

9.4.6.8. Sustain support equipment

9.5. Recruit and Access

9.6. Manage Force Quality

9.7. Posture Responsive Forces

9.8. Generate Public Goodwill (placeholders)

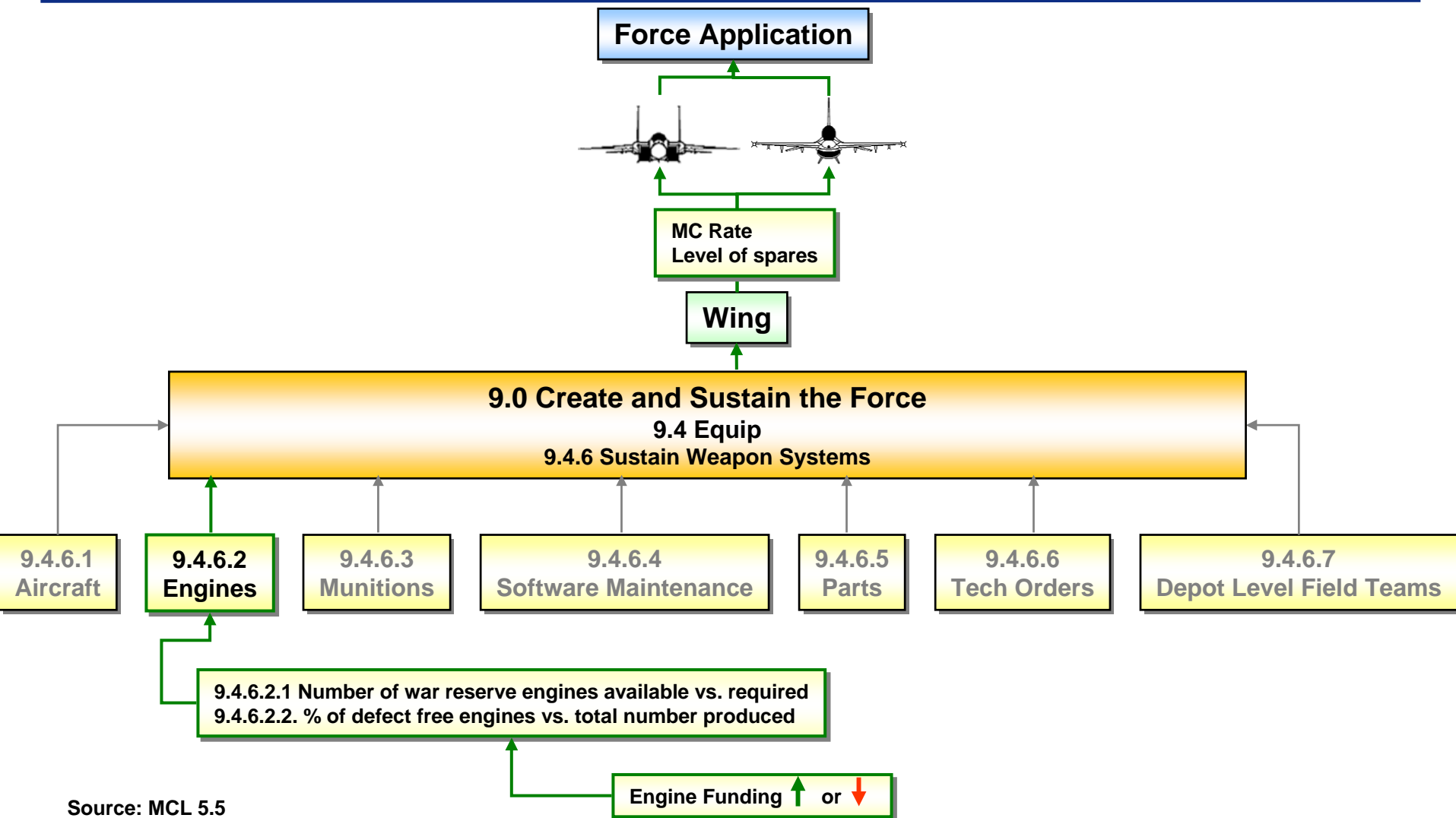
Source: MCL 5.5



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Methodology:

Pilot Project Conceptual Activity Model



Source: MCL 5.5



Methodology:

Pilot Project Data Source Selection

- Initial look - Weapon System Cost Retrieval System (WSCRS)
 - Depot maintenance costs
- Alternate sources for future looks:
 - Commanders' Resource Integration System (CRIS)
 - Actual expenditures
 - Lowest level is Program Element (PE) Code
 - AF Total Ownership Cost (AFTOC)
 - Total retail costs
 - Actual expenditures plus obligations



Methodology: Programming



- **Capability to cost relationships**
 - **Allow identification of funds to program**
 - **Support Analysis of Alternatives, Business Case Analysis, etc.**
 - **Support investment decisions through Joint Capability Identification and Development System (JCIDS) process**
- **Programming ideas**
 - **Business Case Analysis**
 - **Activity Based Costing**
 - **Defining capability metrics**



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Conclusions

- **Goal of CBP&P is to build the optimal force to meet a wide variety of threats**
 - **Linking capabilities to cost is a necessary next step**
 - **Programming piece is still in infancy**
- **CBP&P should lead to Joint assessment and planning methodologies**
- **Ultimate challenge is funding joint capabilities-based budget**
- **Result - better inter-service budget priorities and more robust shortfall/tradespace analysis**